REMARKS

This is responsive to the Official Action dated August 8, 2008.

The Brief Description of the Drawings has been corrected as called for in the outstanding Official Action.

The invention of this application relates to a switched mode power converter having, in its output section, a controlled switching device that is enabled when load increases, but that is disabled when load is light. The claims of the application have been amended to more clearly set forth the light and heavy load mode of operation of the power converter. No art of record provides the two modes of operation or the means for selecting one of these two modes based upon the rate of change of a bias voltage representative of the converter's output power.

All of claims 1 – 8, 10 – 13 and 15 – 30 stand rejected under 35 U.S.C. § 103 as unpatentable over U.S. patent No. 5,757,627 of Faulk in view of U.S. patent No. 6,594,161 of Jansen et al. This rejection is respectfully traversed.

The claimed invention continues to be patentable as the claims set forth the features previously shown to be neither disclosed nor suggested by Faulk and which features are not taught or suggested by Jansen et al. In particular, neither patent teaches or suggests control of a power converter's switching device in dependence on the rate of change of a bias voltage representing output power. Moreover, as now amended, such control determines which of two operating modes of the power converter is used, a light load mode or a heavy load mode.

In the outstanding Official Action the examiner refers to col. 6, l. 4 – 7 of Faulk to show that Faulk discloses a controller for determining the rate of change of the bias voltage. In this paragraph, however, Faulk just discloses sensing when a capacitor voltage drops below a threshold: "The controller for transistor 110 must sense when the capacitor 114 voltage, VD has dropped below this low voltage threshold." The capacitor 114 is a parasitic capacitance of the transistor 110. Col. 3, l. 47 – 51. Its voltage does not represent output load or rate of change of a bias voltage.

But sensing whether a voltage drops below a threshold is certainly not the same as determining the rate of change of a voltage as claimed in the independent claims in this application. Similarly the examiner refers to col. 6, l. 52 – 62 to show that the rate of change is

characterized (as in each of the independent claims 1, 15, 18 and 24) to control a power converter's switch as a result of this characterization. Here Faulk discloses:

> "The controller for transistor 116 must wait an appropriate time for sufficient energy to transfer to transformer 100. The controller for transistor 116 must detect or estimate when the secondary current IS has dropped below zero, and after this Zero crossing IS is allotted a fixed time to transfer energy to the transformer 100. This delay is proportional to the input-output voltage ratio.
>
> Alternatively, it is also possible to measure IS and turn of (sic) switch 116 when IS reaches a sufficient negative amplitude (in relation to Vin)."

Again, Faulk does not disclose a characterization of the rate of change of the bias voltage.

Neither does Jansen et al. disclose a controller that determines the rate of change of a bias winding. Jansen et al. disclose a switching power converter with a transformer T, a master switch Q1 on the primary side and a slave switch Q101 on the secondary that enables zero voltage switching on both switches. The switching on of the slave switch Q101 is determined based on the waveform generated by the transformer T. The primary waveform is sensed with a primary sense winding T1B and the secondary waveform is sensed with a secondary sense winding T1D. The signals from the waveform sensors are fed to zero voltage detectors (as shown in Fig. 3 of Jansen et al.) of the control circuits that control the switches.

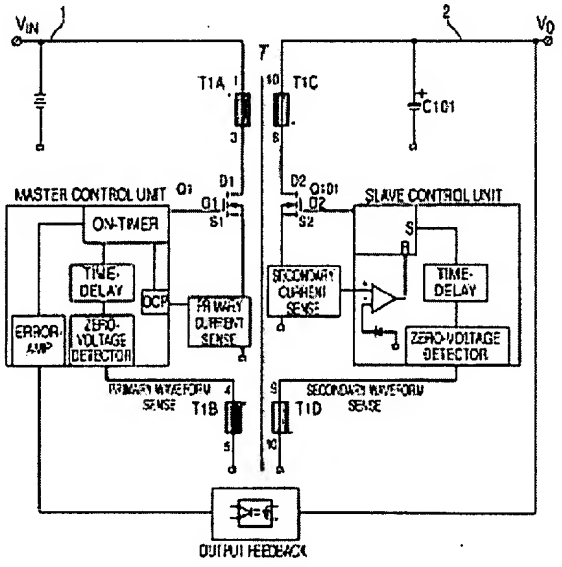

FIG. 3

Although the waveform sense windings T1B, T1D might be interpreted as the claimed bias windings, contrary to the invention, Jansen et al. do not disclose control units for determining the rate of change of the bias voltage and for characterizing this rate of change in order to control the switches as a result of that characterization. Rather, Jansen et al. just disclose control units that determine the zero crossing of the sensed waveforms.

Accordingly, neither of the relied-upon patents discloses or suggests "... a control circuit for determining the rate of change of said bias voltage, characterizing said rate of change, and controlling said control input as a result of the characterization." The teachings of the two patents cannot be combined to arrive at what neither discloses. The pending claims are therefore patentable.

Furthermore, with the foregoing amendments to the claims, it is made clear that the control of the switching device of the claimed power converter (and method of operation) is effective to change the "mode of operation" of the power converter, between a "light load" mode of operation and a "heavy load" mode of operation. No such control of a power converter's switching device is provided in either the Faulk patent or the Jansen et al. patent. Consequently, again, there is no possibility of combining the disclosure of the two patents to arrive at what is found in neither.

New dependent claims 31 – 40 are patentable by their dependency as well as for their content, which is not found in either of the Faulk and Jansen et al. patents. For example claim 31 provides that "the control circuit enables the switching device when the load is heavy and disables the switching device when the load is light." Method claim 36 is similar. Neither of the Faulk or Jansen et al. patents enables or disables a power converter's switch on the basis of light or heavy load.

Dependent claim 32 goes further. It calls for "a diode in said circuit to serve as a secondary switch in a power output portion of the power converter when the switching device is disabled in the light load mode of operation of the power converter." Dependent method claim 37 provides similarly. Neither Faulk nor Jansen et al. or any other art of record uses a diode and switching device in the manner claimed, and particularly not in response to a light or heavy load.

Dependent claims 33, 34 and 35 are particular in the switching device and diode of claim 32. And claims 38, 39 and 40 are similarly particular dependent method claims. All of these

claims, taken with the content of the claims from which they depend, completely differ from any art of record.

For each of the above reasons, all claims now present in this application patentably differ from Faulk, Jansen et al. and all art of record. Early further examination and allowance of this application is respectfully requested.

A three month extension of time to respond to the Official Action is requested and the appropriate fee is submitted with this amendment. A check in the amount of $1,620.00 covering the extension of time fee and the additional claims fee is enclosed. Authorization is given to charge any additional fees associated with this communication to Deposit Account No. 070135.

Any questions or suggestions regarding the application or the amended claims submitted herewith should be directed to the undersigned attorneys for applicant at the telephone number listed below or by email to the email address listed below.

Respectfully submitted,

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